

Notice of Allowability

Application No.

10/799,778

Examiner

Mark Kopec

Applicant(s)

NAKAMURA ET AL.

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Int. Summ. of 09/28/06*.
2. ☒ The allowed claim(s) is/are 1,3-18 and 20-22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Mark Kopec
Primary Examiner

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Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

In **claim 1**, line 6, after "of copper" add --wherein the first metal oxide comprises at least one metal oxide selected from the group consisting of Al_2O_3 , ZrO_2 , TiO_2 , SiO_2 , Nb_2O_5 and Ta_2O_5 --.

Cancel claims 2 and 19.

In **claim 3**, line 1, change "claim 2" to --claim 1--.

Add new claim 21:

--21. A conductive paste adapted to be sintered with a ceramic body at the same time, the conductive paste comprising a conductive component and an organic vehicle, wherein the conductive component comprises a copper powder coated with a

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first metal oxide having a melting point exceeding the melting point of copper and a powder of a second metal oxide having a melting point exceeding the melting point of the copper, wherein the second metal oxide comprises at least one metal oxide selected from the group consisting of Al_2O_3 , ZrO_2 , TiO_2 , SiO_2 , Nb_2O_5 and Ta_2O_5 ; the content of the first metal oxide is in the range of about 0.05% by weight to about 5% by weight of the total weight of the coated copper powder and the metal oxide powder; and the total content of the first metal oxide and the powder of the second metal oxide is in the range of about 1% by weight to about 12% by weight of the total weight of the coated copper powder and the metal oxide powder.--.

Add new claim 22:

--22. A ceramic multilayer substrate comprising a ceramic sinter and a conductive sinter, wherein the conductive sinter is a sintered conductive paste according to claim 21.--.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Edward A. Meilman on 09/28/06.

The following is an examiner's statement of reasons for allowance:

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Siuta et al (4,521,329) discloses thick film conductor compositions comprising finely divided particles of copper oxide-coated copper (m.p. approx 1083°C) and low softening point inorganic binder dispersed in a low-resin organic medium. Additional copper oxide (m.p. approx 1235-1326 °C) is incorporated into the composition by either direct addition or by inclusion in the inorganic binder (Abstract).

The reference does not disclose or suggest conductive paste compositions wherein the first/second metal oxide comprises at least one metal oxide selected from the group consisting of Al_2O_3 , ZrO_2 , TiO_2 , SiO_2 , Nb_2O_5 and Ta_2O_5 . Also, it is noted that applicant has shown through direct comparative example that the claimed compositions possess superior/unexpected properties as compared to similar compositions outside the scope of the instant claims (see Table 1 of the instant specification).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

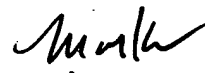
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Kopec whose telephone number is (571) 272-1319. The examiner

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can normally be reached on Monday - Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Mark Kopec
Primary Examiner
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MK

September 28, 2006